# UNCLASSIFIED

AD 403 885

Reproduced
by the

DEFENSE DOCUMENTATION CENTER

**FOR** 

SCIENTIFIC AND TECHNICAL INFORMATION

CAMERON STATION, ALEXANDRIA, VIRGINIA



UNCLASSIFIED

NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

MAKE OR BUY PROGRAM
Letter Contract AF 04(694)-270
M57A-1 STAGE III MINUTEMAN MOTOR



Prepared by

CONTRACT ADMINISTRATION DIVISION
HERCULES POWDER COMPANY
CHEMICAL PROPULSION DIVISION
Minuter Research and Development Group
Bacchus, Utah

Prepared for

HEADQUARTERS, BALLISTIC SYSTEMS DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
Norton Air Force Base
California

### MAKE OR BUY PROGRAM Letter Contract AF 04(694)-270

#### TABLE OF CONTENTS

SEC	TION	PAGE NO.
I.	INTRODUCTION AND GENERAL COMMENTS	1
	SMALL BUSINESS PARTICIPATION	
III.	"MAKE OR BUY" REVIEW BOARD	3
IV.	VENDOR SELECTION	4
v.	FACE SHEET - MAKE OR BUY STRUCTURE	5
VI.	MAJOR COMPONENTS, ASSEMBLIES, OR PARTS RECEIVING	6

#### INTRODUCTION AND GENERAL COMMENTS

Outlined herein is the Hercules Powder Company Make or Buy Program applicable to Letter Contract AF 04(694)-270.

Make or Buy decisions have been arrived at after a comprehensive review and evaluation by management of all known factors. Initially, decisions to "make" are formed upon the factors of facilities, manufacturing knowhow, adaptability, etc. After formulating a decision of "make" from these factors, studies are then conducted into the areas of unit cost, transportation, management control, etc., the result of which confirms or changes the "make" decision. Unit cost consideration is based and weighted upon detailed, comprehensive cost analyses of both in-house manufacture and vendor furnished costs.

Hercules basis for vendor selection is predicated on an initial "Vendor Survey" followed by successful contractual performance in areas of quality, capability, delivery and final qualification of the product to prescribed standards using reliability techniques developed through the R & D Program under Contract AF 04(647)-243 and production contracts AF 04(647)-690 and AF 04(694)-127.

#### SECTION II

#### SMALL BUSINESS PARTICIPATION

Hercules, Bacchus, has a firm policy to develop and maintain a roster of technically and financially competent Small Business concerns and afford all Small Business concerns an equitable opportunity to compete for business within their capability. Procedures are established in the Purchasing Division, HPC Bacchus, to insure that bids are received from Small Business concerns whenever practical and that vendors having contracts with HPC comply with the Small Business requirements in their subcontracts.

The effectiveness of Hercules' Small Business policy can readily be evaluated by comparison of the Small Business participation in all defense procurement, which on a total dollar volume for fiscal year 1962 was 31.8%, while here at Bacchus the participation by Small Business was 39.43%; 8% above the national average. Presently the monthly volume of orders to Small Business at Bacchus is 75% of total orders placed.

#### SECTION III

#### 'MAKE OR BUY" REVIEW BOARD

Bacchus Works of the Hercules Powder Company, Chemical Propulsion

Division, has initiated a Make or Buy procedure under Management Manual

Procedure 4-24, 8 February 1963, which establishes a Make or Buy Review

Board consisting of management and technical representation under

the chairmanship of the Superintendent of Contract Administration, for the purpose of making Make or Buy decisions at the appropriate time in a contract program.

#### SECTION IV

#### VENDOR SELECTION

The individual quantity requirements of the items subcontracted to the individual vendors is contingent upon vendor capability, production schedules, available special tooling, vendor qualification, performance, and reasonableness of price, with prime emphasis being placed on ability for performance and maintenance of reliability. Because of the reliability and confidence level that must be maintained in the end item being produced under this contract, reasonableness of price cannot be utilized as the determining factor in the selection of a vendor. Price is not totally disregarded in this respect, however, as Hercules strives by aggressive negotiation and value analysis to obtain reliability at the most reasonable price.

# FACT SHEET - MAKE OR BUY PROGRAM

Program MINUTEMAN

Contract No. AF 04(694)-270

<u>\*</u> 1. Number of items requiring Make or Buy decisions....... 8. Statement regarding Small Business: (What the per cent of Dollars on Buy items are to Small Business)

Participation by small business in the 'Make or Buy" decision items is 3,42%

(List items deferred and approximate date they will be submitted to the Contracting Officer for review and approval.) 9. Statement concerning Deferred items:

## none

\* Item M, External Insulation, and Case Machining, are both 'Make and Buy" items and included in both of these figures.

SECTION VI

# MAJOR COMPONENTS, ASSEMBLIES, OR PARTS RECEIVING 'MAKE OR BUY" MANAGEMENT DECISION

Item No.	Part No.	Part Name	Page	Recommendation
1	01A-00221-083	Case, Motor Chamber	A	Make
2	01A-00224-001	Case, Machining	В	Make & Buy
3	01A-00478-001 01A-00478-003	Insulator, Case, Internal	С	Buy
4	01A-00560-001	Pyrogen Igniter	D	Make
5	KR 80000-07	Igniter S & A Device	E	Buy
6	01A-00768-005 01A-00768-006	Nozzles	F	Buy
7	170326-0101CEC	Pressure Transducer	G	Buy
8	01A-00074-003	TT Subassembly	Н	Buy
9	2036-3	TT Shell Insulator	I	Buy
10	7300-9	TT Arm/Disarm Switch	J	Buy
11	01A-00545-001	TT Frangible Sector	ĸ	Make
12	01A-90078	Tumble Motors	L	Make
13	01A-01648 01A-01829	External Insulation	M	Make & Buy

Part Number <u>OIA-00221</u> Part Name <u>Case, Motor</u> Ouantity per motor 1				Reason for Decision:  Gase Winding is a proprietary process of the Hercules Powder Company- developed to provide a suitable case meeting the Stage III Notor design requirements.  Technical and manufacturing competence gained through production AF Contract O4(647)-243, and O4(647)-690 were substantiating factors in recommending Make.
	ned Fac.	none		for Decisi letary pro s case meel ring compe ((647)-690
	Covernment owned Facilities?	Ou		Reason ing is a propri vide a suitable and manufactur (7)-243, and OK
•	Estimated Lead Time Weeks Tool. Prod.	6		Case Wind sed to pro mants. Technical tract O4(6/ ding Make.
0.70	Lead Tir			Case is developed to requirements. Techni AF Contract Orecommending H
OR BLY STRUCTURE  NO. AF OG (694)-2  dation MAKE  HPC Rocky Hill	Tooling Monthly Capacity	roduction    be used.		
HERCULES POWDER COMPANY MAKE OR BLY STRUCTURE CONTRACT NO. AF 04 (694)-270 Recommendation MAKE Make: HPC Rocky Hill	Special Estimated Cost	Existing production Tooling will be used.		
	Estimated Total Cost per End Item	\$7572		ing facilities
loid er nts bor	Est. Qty.	135		 lud ing
er with ove	Estimated Unit	\$7572		s part, incl
BM-7000/9 (12-62) Date: 24 April 1963 Description: Cylindrical chamber with ovaloid ends fabricator of the from fiberglass filaments bonded with epoxy resin.	Source	Hercules Powder Company Rocky Hill, New Jersey Large Business		Remarks: Requirements for this part, including and special tooling, are estimated.

Part Name Case, Nachfuing Part Name Case, Nachfuing	Illustration not applicable	Arrowsmith has developed "apadylity" chironic operation under R & D Contract AF 04 (647)-243 at their los Angeles plant and Production Contract AF 04 (647)-690 at Clearfield, Utah. Their Clearfield facilities are used for production to reduce handling and transportation effort.
	Pic. None	teys this plant a clear tactor of the clear ta
	Facilities no	Arrowsmith has developkuichpablityt through Contract AF 04(647)-243 at their los Angeles plant and AF 04 (647)-690 at Clearfield, Utah. Their Clearfield f production to reduce handling and transportation effort.
ing	Prod.	ith has clearfie clearfie e handlir
) 	Tool. Frod. 15	Arrowss P 04(647) )-690 at to reduc
HERETEES PEADLE COMPANY MAKE OR EN'S STRUCTURE  Fract No. AF Oc(694)-270  Tract No. AF Oc(694)-270  Tract No. AF Oc(694)-270  Buy: Arrowsmith Plastic Tooling  Make: HPC, Bacchus	Monthly Capacity	Contract A AF 04 (647 production
HEACTLES FOR BYAKE OR BLY Contract No A Recommendation Buy: A Make: H	Social Tooling Estimated Hontbl Coxt Capaci	Make vill
	\$3000,00	g facilities ifined for this ilable for this Make this Make or Buy will
of machining theory of corrard ends, Also includes mably of turn-blies.	Office of the state of the stat	uding f
consists of a feeth files of a feeth fil	Sand   Ea   Sand   Otto   Sand   Otto   Sand   Sand   Otto   Sand   Sa	s part, inclated.  ments are notices are not defined by
BW-7000/9 (12-62)  Battle Case, Machining, consists of machining the "over-lap" on the aft end, forward ends, and the inter-stage ring. Also includes plaster removal and disassembly of turnaround mandrel shaft assemblies.	Arrowsmith Plastic Tooling Los Angeles, California Large Business Substantial Unemployment HPC, Bacchus, Utah Case Machining of loaded motor for retrofit	* At this date program requirements for this part, including facilities and special tooling, are estimated.  * At this date program requirements are not defined for this effort and therefore, quantities are not available for this Make or Buy, When quantities are defined by BSD this Make or Buy will be revised.

01A-00478-001 (US) Part Number 01A-00478-003 (Cdy) • Insulator, Case Both suppliers not only have manufacturing availability for the insulators, but also fabricate these from raw materials; rubber production being their The existence of two sources who are capable of providing quality items within the specified delivery schedule at a competitive price was a paramount factor in reaching the decision to "BUY", Internal Quantit per mitor HPC does not have the facilities or equipment for manufacture of Part Mak Reason for Decision: Add. none none Geverament award Facilities? 8 8 main source of business. Letimated Grad Time Weeks Prod. 56 20 loot. insulators. U. S. Rubber Contract No. AF 04(694)-270 HERCHES POWDER COMPANY MAKE OR ELY STRUCTURE Goodyear Existing Teoling
Will be used on a
non-interference basis treefal footing Capacit Recommendation ) et 1,591 d 20,000\* 6.05 stail the \$20,000 represents estimated costs for 7 stainless steel plaster mandrel shafts. The production shafts are made of low carbon steel. It is anticipated that used stainless steel shafts will result in low refurbishing costs. Stinated lotal tost per \$7800.00 \$8200.00 Requirements for this part, including facilities and special tooling, are estimated. Which with the internal case insulator is composed of Busa-S Ruber and ultimately forms a bonded inner to the Spiralloy case. The purpose of this insulation is to act as a hear barrier between the burning propellant and the Est. 79 79 . . . and individ \$7800.00 \$8200.00 1143 1.1.1 Goodyear 1144 East Market Street 24 April 1963 ER-7000/9 (12-62) Mishewaka, Indiana Large Business Akron, Chio Large Business U. S. Rubber . . . . .

Figure   F	Date: 24 April 1963  One of a passent assembly consists of a base plate assembly which fits into the aft dome port Read a bracket assembly that contains pyrotechnic material enclosed in a small rocket motor. This pyrotechnic material ignites the small rocket motor which spews out flames along the entire burning surface of the full-scale rocket motor.	mbly consist fis into the sembly that enclosed in otechnic mate or which spen	s of a aft do contain a small it wa out	s of a base plate aft dome port Recontains pyro-a small rocket raial ignites the recont flames along the full-scale	THRCTLES PUM MANT ON BYY CONTRACT NO RECORDS INDEED	HEACTES POWDER CONTAIN MAKE OR BY STRECTURE  Tract No AP 04(694)-270  OMES INDAIL HAVE  HPC KENVIL	H.				Part Name Evrosen Instan
520.00 s8 \$1520.00 75	Source	Estimated Fait	Est.	Estimated Total Cost per Ind Item	Soccial Estimated Cost		Esti lead Ti Tool.	mated mc Weeks Prod.	Government owned Facilities?	Add. Fac.	
	Mercules Powder Company Kenvil, New Jersey Large Business	\$1520.00	83	\$1520.00	none	27	!	16		none	
part, including facilities											
part, including facilities											
part, including facilities											
Technical and manufacturing competence gained through R&D, availabilite of adequate facilities at Kenvil, were substantiating factors in recommendation white:  "MAKE".  This small rocket notor is within the manufacturing field and capability.	AFF : Requirements for special tooling, are estim	this part, 1 ated.	ncludin	g facilities			No of	ther wendo	Reason for D or immediately avail ities to produce th	ecision able with	th technical and manufacturing
						ō I	Technof adequal	nical and te facilit small roc	manufacturing compe ies at Kenvil, were ket motor is within	tence ga	ined through R&D, availability itiating factors in recommendia nufacturing field and capability

BW-7000/9 (12-62)										•
Date: 24 April 1963  Description: Igniter S & A Assembly is a mechanical Safe & Arm mechanism used to initiate the Squibs in the igniter which in turn initiate propellant ignition,	sembly is a unism used to gniter which	mechanical o intiate in turn 1,	:al :e the	HERCLES POMAKE OR BT Contract No Recommendation	HHRCLLS POWDER COMPANY MAKE ON BY SIRICTIVE Contract No. AF 04 (694)-270 Recommendation BUY Bulova Research and Development Lab.	4)-270				Part Name Igniter S&A Switch
										Quantit per motor 1
Soulies	1stimated Unit	Est.	Fstimated Fotal Cost Per End Item	Sectial Estimated Cost	Special Tooling imated Monthly Ost Capacity	Estimated Lead Time Meeks Tool. Prod.	ated c Weeks Prod.	<b></b>	Add. Fac. Nec.	
Bulova Research & Development lab. 6010 Woodside Avenue Long Island, New York \$ 20! large Business - Area of Substantial	ab. \$ 2057.00	85	\$2057.00	None	55		22	Tes, \$000,445 pre- sently being used on Minuteman program \$106,752 under Navy Contracts	on y none	
One are to year it										
									·	
<pre>Negative</pre>	part, inclu	ding fa	cilities and				HPC does item.	Reason for D not have facilities	ecision B neces	Reason for Decision: HPC does not have facilities necessary for the manufacture of this item.
					AF 04 Bulovi famili) techni	(647)-243 a has the s farity with	Bulova is and Produ necessary h materia	Bulova is currently supplying similar it Belova has Production Contract AF 06(647)-690, Bulova has the necessary manufacturing skill, adequate familiarity with materials and techniques required for technical and precision- type item.	ng simi 04(647) 11, ade require	Bulova is currently supplying similar items under R & D Contract AF 04(647)-243 and Production Contract AF 04(647)-690, and AF 04(694)-127. Bulova has the necessary manufacturing skill, adequate trained personnel, and familiarity with materials and techniques required for the manufacture of this technical and precision- type item.
					l ddns	y demands	Bulova's in excess	Bulova's production facilities are adequate to m supply demands in excess of their current contract obligations.	les are contrac	Bulova's production facilities are adequate to meet the increased in excess of their current contract obligations.

BW-7000/9 (12-62)								•		•
Date: 24 April 1963  Description: A pivoted nossles, incorporating a blast tube, an integral expansion cone, and a throat section.	es, incorpo al expansio	rating n cone,		HERCULES POW MAKE OR BUY Contract No Recommendation Thompson=R	HERCYLES POWDER COMPANY MAKE OR BUY STRUCTURE tract No. AF 04(694)-270 ommendation BUT Thompson-Ramo-Wooldridge Kaiser Aircraft and Electronics	270 48e lectronics	_			01A-00768-006 Part Number 01A-00768-005 Part Name Mossles
			Estimated	Special Tooling	Tooling	Estimated	ated for the		Add.	Quantity per motor
Source	Estimated Unit	Est. Qt.	Total Cost per End Item	Estimated Cost	Monthly Capacity	Tool.	Prod.	Government owned Facilities?	Fac. Nec.	
Thompson-Ramo-Wooldridge 2355 Eurlid Avenue Cleveland, Onio Large Business	\$3900#	100	\$15,600	Existing Production Tooling will be used on a non-interference basis	oduction 1 be used terference		27	Yes, presently used on Minutem Program \$800.08	n none	
Kaiser Aircraft and Electronic 800 Doolittle Drive San Leandro, California	84.079*	131	\$16,316	Existing Production Tooling will be used on a non-inferference basis	duction be used erference	-	27	Yes, presently being used on Minuteman Program \$784,733	Done	
Rumarky: Requirements for this part, including facilities and special tooling, are estimated. *Estimated cost does not include tungston or carbon.	irt, includi ited. : include tu	ing faci	facilities iton or carbon.			AF O Qual: satis	4(647)-24 ity, deli sfactory	Reason for Decision: Both sources have s: 3 and Production Contract Avery, and overall performant to warrant retention as qua	Decision  sa have  ontract  perform  on as qu	Reason for Decision:  Both sources have supplied nozzles on R&D Contract AF 04(647)-243 and Production Contract AF 04(647)-690, AF 04(694)-127. Quality, delivery, and overall performance by both wendors have been satisfactory to warrant retention as qualified sources.
						necess is con factur field.	saary for onstantly uring pro	HPC does no the fabrication of changing and requi cess so as to disco	ot have F nozzle ires suc	HPC does not have the facilities or equipment is constanty for the fabrication of nomines. "State of Art" in this field is constantly changing and requires such extensive R&D into menu. facturing process so as to discourage entry into such a specialized field.
						provi tive	iding que price wa	The existen lity items within t	te of the spec	The existence of two sources who are capable of providing quality items within the specified delivery schedule at a competive price was a paramount factor in reaching the decision to "Myv".

de de

•	Part Number 170326-0101CEC Part Name Pressure Transducer Ouantity per motor 1					Since the mature of the work is not within the normal scope of Hercules Powder Company, the decision was made to buy.
		Fac.	none			Ethe drive d
		Government owned Facilities?	ou			Since the nature of the nature
		Weeks Prod.	21			Hercule
	170	Estimated Lead Time Weeks Tool. Prod.	:			
	HERCLLES POWDER COMPANY MAKE OR BUY STRUCTURE tract No. AF 06(694)-2 ommendation Buy solidated Electro Dynam	Tooling Monthly Capacity	Existing Production Tooling will be used			
	HERCULES POWDER COMPANY MAKE OR BUY STRUCTURE Contract No. AF 04(694)-270 Recommendation Buy Consolidated Electro Dynamic, Inc.	Special Estimated Cost	Existing I Tooling w			
	attached trans- pressure	Estimated Total Cost Per End Item	\$950.00			facilities
	device e that hamber	Est.	65			ding fa
	seducer is a er base plat e in metor o	Estimated Unit Cost	\$ 950.00			mted. inclu
M-7000/9. (12-62)	Date: 24 April 1963 Pescrietion: The pressure transducer is a device attached through the igniter base plate that translates the variance in meter chamber pressure to an electrical impulse.	Source	Consolidated Electro Dynamic, In 1400 South Sammrock Monrovia, California Large Dusiness - Area of Substantial Unemployment	_		Remarks: Requirements for this part, including and special cooling, are estimated.

HPC does not have the necessary facilities or equipment necessary Both sources listed have been utilized in supplying requirement for R & D Contract AF 04(647)-243 and Production Contracts AF 04(647)-690, AF 04 (694)-127. Quality, delivery, and overall performance by both vendors have been satisfactory to warrant retention as qualified sources. 01A-00074-001 01A-00074-003 TI Subsessebly The existence of two sources who are capable of providing quality items within the specified delivery schedule at a competitive price was a paramount factor in reaching the decision to "BUY". 4 AL LIGHT Quantity per motor Part Number Part Name Reason for Decision: none Add. Fac. Nec. none Covernment owned Yes, presently being used on Minutemen \$320,474 Facilities? 8 for the manufacture of this item. Estimated Lead Time Weeks Prod. 8 81 Kaiser Aircraft and Electronics Edler Industries Tool. N/A AF 04(694)-270 HERCYLES POWDER COMPANY MAKE OR BLY STRUCHURE Existing Production Tooling will be used Capacity Special Tooling Estimated Monthly Existing Production Fooling will be used 2 Recommendation Contract No Cost Total Cost Per End Item Estimated \$1,100.00 \$1296.00 • Requirements for this part, including facilities and special tooling, are estimated. A cylindrical aluminum tube assembly consisting of a shell and a nylon insulator. Est. 268 Qt y. 413 Estimated \$275.00 \$324.00 Unit Kaiser Aircraft and Electronic 800 Doolittle Drive San Leandro, California Edlar Industries 5229 Firestone Blvd. Los Angeles, California Small Business - Area of Substantial Unemployment Date: 24 April 1963 BW-7000/9 (12-62) Large Business Description: Remarks: Source

.

Part Number 2036-3 Part Name IT Shell Insulator Quantity per motor 6		Reason for Decision:  Cost of special forms and dies required to form this item in consideration of the relatively small requirement, would reduce profit to a point that other sources within the industry could not produce at a competitive price.  Swedlow, Incorported has capability and capacity to furnish all production needs of this item.
	Add.	special specia
	Government counced Facilities?	Cost of special forms in consideration of the raduce profit to a point that could not produce at a compared by Swedlow, Incorporte all production needs of this
	Procks	this ite would re industry furnish
70   at ed	First Fred Fine Weeks Tool - Prod.	
HERCLIES POWDER COMPANY MAKE OR BYY STRUCTURE  tract No	Monthly Capacity Reduction Il be used.	
HERCULES POW MAKE OR BITY Contract No Recommendation	Social Estimated Cost Extering F Tooling vi	
ourrounds R.	Estimated Total Cost per End Item \$924.00	g facilities
	244 Ot y. 744	ne ludin
lation ring mably.	Estimated Unit Cost	his part, i
BM-7000/9 (12-62)  Date: 24 April 1963  Description: Phenolic insulation ring that the II Subassembly.	Source Swedlow, Incorporated 6086 Andrias Blvd, 6086 Angeles, California Small Business - Area of Sub- stantial Unemployment	Remarks: Requirements for this part, including facilities and special cooling are estimated.

Consolidated Controls Corporation (previously Electro-Actuators) has been qualified through production effort under the R & D Contract AF 04(647)-243 and have been supplying 7300-5 configuration switches for AF contracts AF 04(647)-690, and AF 04(694)-127. Currently this vendor is being qualified for production of the 7300-9 TF Arm/Disarm switch. As this type of commodity is not within the scope of company products, facilities and/or equipment for manufacture are not available. TT Arm/Disers 7300-9 Quantity per motor Switch Part Number Part Name Reason for Decision: None Add. Fac. Nec. Government owned Facilities? 옾 Estimated Lead Time Weeks Prind. 21 Tool. AF 04(694)-270 HERCULES POWDER COMPANY MAKE OR BUY STRUCTURE Special Tooling
Estimated Monthly
Cost Capacity ğ 8 Recommendation Requirements for this part, including facilities and special tooling, are estimated. Contract No. None \*This source was formerly known as Electro-Actuators, 9705 Klingerman, El Monte, California. Consolidated Controls purchased Electro-Actuators on October 1, 1962. Estimated Total Cost per End Item \$2111.70 Machanical Safe & Arm Mechanism through which current flows to initiate the frangible sector prior to thrust termination. 138 Est. Ot v. Est imated \$2111.70 l'nit Cost \*Consolidated Controls Corp. 750 South Isis
Englewood, California
Large Business - Area of
Substantial Unemployment Date: 24 April 1963 Bu-7000/9 (12-62) Pescription: Remarks: Source

:

Reason for Decision: Tachmical proficiency establish-ed through production of similar items and through R&D work accomplished at Port Ewen. Hercules has manufactured such explosive type squibs as this item for many years and has been one of the prime suppliers to commercial users. Production of this particular type is easily accomplished without additional government or contractor facilities and requires only nominal special tooling Manufacturing facilities and trained personnel available at Port Been Anticipate that better quality control and scheduling into motor production can be obtained and maintained by combining Wing VI requirements into manufacturing operation at Port Even. 01A-00545-00 Part Number 01A-00545-001 II Frangible 4 Cost estimates indicate lower cost than from other suppliers. Quantity per motor Sector Part Name Add. Fac. Nec. 2000 Covernment owned Facilities? 90 Estimated Lead Time Weeks Prod. 2 Tool. AF 04(694)-270 HPC PORT EMEN HERCULES POWDER COMPANY MAKE OR BUY STRUCTURE Special Tooling
Estimated Monthly
Cost Capacity 8 Recommendation Contract No.\_ none NUMBERS: Requirements for this part, including facilities and special tooling, are estimated. Estimated
Total Cost
Per
End Item \$480.00 Description: An explosive squib used to release tension on IT closure ring which allows internal pressure to force closure out and thus realize thrust termination, Est. or. 232 Estimated Unit \$120.00 Cost Harcules Powder Company Fort Even, New York Large Business Date: 24 April 1963 BH-7000/9 (12-62) Remarks: Same

	Part Name Tumble  Motors  Onantite per meter		No other vendor is immediately available with technical and manufacturing competence or facilities to produce this item.  Technical and manufacturing competence gained through manufacture of tumble motors for AF Contract O&(647)-243 and AF O&(694)-127 were substantiating factors recommending Make.
		Add. Nec. Nec.	Decision:  n. party tec party tec party tec party tec (694)-127 (
•		Facilities?  No	No other vendor is immediately available competence or facilities to produce this item. Technical and manufacturing competence ga motors for AF Contract 04(647)=243 and AF 04(6 feed) and AF 04
	뉥	<del></del>	or is immediated to manufacturated the fact of (64
	270 	Lead Time Works Tool. Prod	No other vende competence or facil Technical and motors for AP Contr recommending Make.
	HERCHES PUNDER COMPANY NAKE OR BY STRUCTURE tract No. AF 04(694)-270 ommendation Make	Too ling Nonth ly Capacity	No c competenc Tech motors fo recommend
	HERGELES PUNDER COMPANY MAKE OR BY'S TRUCTURE CONTract No. AF 04(694)-270 Recommendation Make Hercules Powder Company - Kenvil	Social Tooling Estimated Month I Cost Capaci \$26,893	
	·	Find Lost Find Item \$30,888	facilities
	ded dou oximate	Est. 0t.y. 400	luding
	rrridge loa motor appr	Estimated Unit Cost Cost 65148.00	s part, inc mred.
B4-7000/9 (12-62)	Date: 24 April 1963  Descrivtion: Aluminum Case, cartridge loaded double base propellant rocket motor approximately 7½ "long.	Hercules Powder Company Kanvil, New Jersey Large Business	Remarks:  • Requirements for this part, including facilities and special tooling, are estimated.

		ı							Z.	PART M
BM-7000/9 (12-62) Date: 24 April 1963 Description: External Sheet Cork on the Cylindrical Section of the case	Cork on the case	Cy1 indz		HERCULES PONDER COMPANY MAKE OR BUY STRUCTURE Contract No. AP 04 (694) Recommendation Make and I RPC Beccht Armstrong	DER COMPANY 7 STRUCTURE AF 04 (684)-270 Make and Buy HPC Bacchus Armetrong Cork	1-270 hy hy Cork		•		Part Number 01A-01648 Part Name Insulation
							:			Owantity per motor
	Estimated Unit Cost	Est Qty.	Estimated Total Cost per End Item	Special Estimated Cost	Tooling Monthly Capacity	Estimated Lead Time Weeks Tool. Prod.	rted Weeks Prod.	Covernment owned Facilities?	Add. Fac. Nec.	
NFC Becchus, Utah Large Business	\$800,00+	69	\$800.00	\$2400.00 Plus Existi Tooling	\$2400.00 Plus Existing Products Tooling	g	80	Yes, Facilities p under Contract AP 04(647)-535 will be used.	procurred bone	Illustration not Applicable
Armstrong Cork 5037 Patata Avenue South Gate, California	\$5347.00	23	\$5357.00	Existing Production Tooling will be used	roduction 11 be used		∞	None	Š.	
<pre>irks: Requirements for this part, including facilities special tooling, are estimated.</pre>	urt, including	3	ities			हे दे 	Arms operation under AP 04(647)-690,	Reason for Decision: Armstrong Cork has develope nder R & D Contract AF 0%(6	becision:	Reason for Decision:  Armstrong Cork has developed capability through operation under R & D Contract AF 04(647)-243 and Production Contract AF 04(647)-690.
*Frice does not include ground plane cost:	ground plane	cos ts				<b>d</b>	ctors in	MPC technical cap factors in recommending Make.	ability .	MPC technical capability and price were substantiating secommending Make.

# DISTRIBUTION LISTS HERCULES POWDER COMPANY MAKE OR BUY PROGRAM LETTER CONTRACT AF 04(647)-270

COPIES NO.	RECIPIENT
1	Hq. Ballistics Systems Division (AFSC) Norton AFB, California Attn: BSRPQ -1
2	Hq. Ballistic System Division (AFSC) Norton AFB, California Attn: BSRPQ-2
3-12	Armed Services Technical Information Agency Arlington Hall Station Arlington 12, Virginia
13-16	Central Intelligence Agency OOR - Std. Distributors Washington 25, D. C.
17	Philadelphia Contract Management Dist. 1411 Walnut Street Philadelphia 2, Pennsylvania
17-18	W. E. Howell - Home Office, Wilmington M. C. Burgy - Home Office, Wilmington
19	J. E. Greer - Home Office, Wilmington
20	F. I. Maurer/J. F. Bullard - Bacchus, Utah
20-25	L. O. Randolph, Bacchus, Utah
26	J. L. Morse, Bacchus, Utah
26-27	R. A. Sawyer, Bacchus, Utah
28	J. C. Farber, Bacchus, Utah
29	V. Rieth, Bacchus, Utah
30-35	Beehive Central File, Bacchus, Utah
36	G. W. Jorgensen, Bacchus, Utah